Appln. No.: 10/519,886

Amendment Dated June 19, 2008 Reply to Office Action of April 16, 2008

<u>Amendments to the Claims:</u> This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- 1-12. (Cancelled).
- 13. (Currently Amended) Method of steering a vehicle with a superimposed steering system, wherein a steering angle input by the driver and an additional angle (additional steering angle) is determined and wherein the additional steering angle can override the input steering angle according to further quantities, by means of an electric motor,

wherein the method includes a steering angle control with a subordinated current or torque control of the electric motor, and wherein an anticipatory control of the nominal speed of the motor  $\omega_{\text{M,nominal}}$  is executed, which is determined from a motor speed specification  $\omega_{\text{M,spec}}$  and a motor speed preset value  $\omega_{\text{M,reg}}$ , and the motor speed preset value  $\omega_{\text{M,reg}}$  is determined on the basis of a comparison between a nominal steering angle value  $\delta_{\text{L,nominal}}$  and a determined actual steering angle value  $\delta_{\text{L,actual}}$ , and the motor speed specification  $\omega_{\text{M,spec}}$  is determined from the time derivative of the nominal steering angle value  $\delta_{\text{L,nominal}}$  and the driver's steering angle  $\delta_{\text{H,and}}$  and a gear ratio factor  $i_{\text{L,2}}$  by means of the following formula:

$$\underline{\omega_{M,spec}} = (\delta_{L,nominal} - i_{L1}\delta_{H}) / i_{L2}$$

14. (Previously Presented) Method as claimed in claim 13,

wherein an actual steering angle value and a nominal steering angle value is determined and, according to a comparison between the actual steering angle value and the nominal steering angle value, a nominal current or a nominal motor torque is produced by which the electric motor introduces the additional steering angle into the steering system.

15. (Currently Amended) Method as claimed in claim 13,

wherein a steering request of the driver  $\delta_{DRV}$  [[52]] is determined on the basis of a steering wheel angle  $\delta_H$  [[50]] adjusted by the driver, and wherein the driver's steering request  $\delta_{DRV}$  [[52]] is composed of the adjusted steering wheel angle  $\delta_H$  [[50]] and an invariably or variable predeterminable gear ratio factor and the gear ratio factor is chosen corresponding to the current driving situation, and wherein a nominal steering angle value [[53]]  $\delta_{nominal}$  is

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determined on the basis of the so calculated steering request of the driver and sent to the steering control.

## 16. (Previously Presented) Method as claimed in claim 13,

wherein the driver's steering angle  $\delta_{\text{H}}$  is determined and, in connection with a gear ratio factor  $i_{\text{L1}}$  by which the driver's steering angle acts directly on the steering gear, an additional steering angle  $\delta_{\text{M}}$  is additively superimposed thereon in connection with a second gear ratio  $i_{\text{L2}}$ , and wherein a superimposed steering angle  $\delta_{\text{L}}$  is determined and sent as an actual value  $\delta_{\text{L},\text{actual}}$  to the steering control, with said superimposed steering angle  $\delta_{\text{L}}$  being determined according to the following formula:

$$\delta_{\text{L}} = i_{\text{L}1} * \delta_{\text{H}} + i_{\text{L}2} * \delta_{\text{M}}.$$

## 17. (Currently Amended) Method as claimed in claim 13,

wherein a driving dynamics control (ESP system) cooperates with the steering control, and wherein an additional steering angle  $\Delta\delta$  [[56]] responsive to driving dynamics is determined when the necessity of a stabilizing intervention is detected by driving dynamics control.

## 18. (Currently Amended) Method as claimed in claim 13,

the method further comprising a driving dynamics control (ESP system) cooperates with the steering control, and an additional steering angle  $\Delta\delta$  [[56]] responsive to driving dynamics is determined when the necessity of a stabilizing intervention is detected by driving dynamics control,

wherein the additional steering angle  $\Delta\delta$  [[56]] responsive to driving dynamics that is produced on the basis of a correcting intervention of a driving dynamics controller [[57]] is additively superimposed on the driver's steering request  $\delta_{DRV}$  [[52]].

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19. (Previously Presented) Method as claimed in claim 13,

wherein the electric motor is additionally actuated by means of a field weakening current according to further quantities, with a view to increasing the motor speed without reduction of the available motor torque.

20. (Previously Presented) Method as claimed in claim 13,

the method further comprising the electric motor is additionally actuated by means of a field weakening current according to further quantities, with a view to increasing the motor speed without reduction of the available motor torque,

wherein the electric motor is additionally actuated by means of a field weakening current when a very direct steering ratio and/or a high nominal speed is desired or required.

21. (Previously Presented) Method as claimed in claim 13,

wherein based on the series steering ratio  $i_{L,series}$  and due to a boosting factor K1 responsive to a steering wheel angle and a boosting factor K2 responsive to the vehicle speed, a resulting steering ratio  $I_{L,ESAS}$  which corresponds to the ratio between the steered wheels  $\delta_V$  and the driver's steering angle  $\delta_H$  is determined according to the following formula:

$$i_{L.ESAS} = \delta_V/\delta_H = i_{L.series} / (K1*K2).$$

- 22. (Cancelled).
- 23. (Currently Amended) A system comprising an electric motor operating under a Computer computer program,

which is suitable for implementingthe system operable to implement a method of steering a vehicle with a superimposed steering system, wherein a steering angle input by the <u>a</u> driver and an additional angle (additional steering angle) is determined and wherein the additional steering angle can override the input steering angle according to further quantities, by means of an electric motor,

wherein the  $\frac{\text{method}}{\text{system}}$  includes a steering angle control with a subordinated current or torque control of the electric motor, and wherein an anticipatory control of the nominal speed of the motor  $\omega_{\text{M,nominal}}$  is executed in the method, which is determined from a motor speed specification  $\omega_{\text{M,spec}}$  and a motor speed preset value  $\omega_{\text{M,reg}}$ , and the motor speed preset value  $\omega$ 

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 $_{\text{M,reg}}$  is determined on the basis of a comparison between a nominal steering angle value  $\delta_{\text{L,nominal}}$  and a determined actual steering angle value  $\delta_{\text{L,actual}}$ , and the motor speed specification  $\omega_{\text{M,spec}}$  is determined from the time derivative of the nominal steering angle value  $\delta_{\text{L,nominal}}$  and the driver's steering angle  $\delta_{\text{H}}$  and a gear ratio factor  $i_{\text{L2}}$  by means of the following formula:

$$\underline{\omega_{\text{M,spec}}} = (\underline{\delta_{\text{L,nominal}}} - \underline{i_{\text{L1}}}\underline{\delta_{\text{H}}}) / \underline{i_{\text{L2}}}.$$

24. (Previously Presented) Steering system for a vehicle, comprising a steering wheel arranged at a steering column, a steering gear, a steering angle sensor arranged at the steering column, an overriding motor that acts on the steering column by way of an overriding gear, an electric steering actuator, a sensor for measuring the position of the steering wheels, and a steering control device,

wherein the steering control device includes a means for implementing the method as claimed in any one of the preceding claims.